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A SERVICE FOR INDUSTRY BUSINESS ENGINEERING AND RESEARCH
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Dear Sir:

Increased output of uranium in South Africa has resulted in limitation of sales by mines to the Combined Development Agency (the joint U.S.-U.K. uranium buying agency) to maximum of 6,200 tons uranium oxide per year, starting July 1, 1958. Production in excess of this may be sold elsewhere. For this March, South African uranium oxide production amounted to $13,500,000 bringing the total for first quarter of this year to over $40,000,000. Last year's first three months saw total of $29,700,000 in uranium oxides produced in South Africa. (South Africa's uranium oxide, a by-product of her gold producers, is now going on the world markets at a time when output of both U. S. and Canadian producers is proving more than adequate to the needs of the U. S., whose purchases support almost all uranium industry of both countries. This also comes at a time when some Canadian uranium mines, which have been producing at a higher rate than their contracts with Eldorado Mining & Refining call for, must cut back to the contract specified rate. Starting July 1, 1958 mines up to schedule on deliveries will be held to contract specified rate. Mines affected are Algom, Bicroft, Consolidated Denison, Gunnar, and Pronto; those that can produce above contract requirements will be allowed by the government to sell to other buyers.) (Other RAW MATERIAL NEWS, p. 5 this LETTER.)

Contract to design and build nuclear research reactor for Austrian Study Group for Atomic Energy has been awarded American Machine & Foundry Co., New York, after evaluation by the Group of proposals made by U. S. and U. K. firms. Of 5-megawatt capacity, the reactor will be of the pool type. It will be main instrument of the Group's nuclear research center near Vienna which will also include among its facilities a 5.5 mev Van de Graaff machine, and supporting laboratories. For the reactor manufacturer, AMF, the contract brings to 15 the number of reactors it is building for installations in the U. S. and abroad. (Other CONTRACT NEWS, p. 5).

Keels for two more nuclear propelled submarines (the Tullibee and one designated only as no. 599) are being laid down this week at the Groton, Conn., yards of Electric Boat division of General Dynamics Corp. Launching yesterday (May 26) of the radically designed nuclear submarine Skipjack at Groton is another facet of the U.S. Navy's accelerated submarine construction program. This has seen Electric Boat, its sole submarine hull contractor, build up its working force to its highest peacetime level, in engineering, construction, and other phases. (Now in service with the U.S. Navy are the nuclear powered submarines Nautilus, Seawolf and Skate; hulls were produced at Groton, with reactors furnished by General Electric Co., and Westinghouse Electric.) (Other BUSINESS NEWS, p. 2 this LETTER.)

International conference on Nuclear Electronics is scheduled for Sept. 16-20, 1958 in Paris by Societe des Radioelectriciens. Ten half-day sessions are planned on radiation and particle detectors; pulse techniques; reactor control; health and radioactive survey instrumentation; data processing; transistor use; and other subjects. Details may be obtained from the Societe at 10 Ave. Pierre Larousse, Malakoff, France. (Other MEETINGS, COURSES, CONFERENCES, p. 5 this LETTER.)

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ATOMIC ENERGY BUSINESS NEWS...

CONSTRUCTION AUTHORIZATION REQUESTS MADE BY USAEC:- Now being studied by Joint Congressional Committee on Atomic Energy is construction authorization request for fiscal year 1959 of the USAEC which totals $193,379,000. This includes $51,000,000 to build a 40,000 kw prototype gas-cooled graphite-moderated power reactor; $8,000,000 for a heavy water test reactor; $3,000,000 for a 10,000 kw prototype preassembled package power plant for rapid erection at military bases; $2,300,000 for special purpose test facility at the Commission's Nevada test site for testing nuclear auxiliary power systems for satellites; and funds for other experimental reactors.

For nuclear fuels, $15,000,000 was requested for plant additions at Savannah River, Hanford, and Idaho Falls to reprocess spent reactor fuels for licensed and naval reactors; $3,200,000 for new waste storage facilities at Idaho Falls; $3,500,000 for integrated fuel processing pilot plant at Oak Ridge using new techniques; and $5,000,000 to equip fuel technology center at Argonne National Laboratory for experiments in core fabrication.

For nuclear and other weapons, the Commission wants $41,700,000 for 15 new projects. This includes $12,500,000 for fabrication plant at Oak Ridge; $3,500,000 for a component fabrication plant at Hanford; $2,250,000 for component test facility at Los Alamos; $2,342,000 for facilities at Eniwetok; $2,000,000 for special processing plant at Mound Laboratory; $178,000,000 for base construction at the Nevada test site; and $2,000,000 to expand the high explosive development plant at Livermore, Calif. For new types of weapons "as yet unknown" $10,000,000 was asked.

In addition to these 1959 funds, the Commission asked amendments to last year's Authorization Act to provide $26,757,000 more for its power reactor demonstration program; an increase of $2,250,000 to a total of $10,000,000 for thermonuclear power experimental work (Project Sherwood); and supplemental funds in amount of $9,406,000 for Princeton and Cambridge accelerator projects.

AGREEMENT REACHED ON NEW NUCLEAR POWER PLANT:- Proposed agreement has been reached between the USAEC and Carolinas Virginia Nuclear Power Associates covering nuclear power station the Associates propose to erect at Parr Shoals, 25-miles north of Columbia, S.C. The agreement covers design, development, fabrication and construction of heavy water-cooled and heavy water-moderated pressure tube type reactor fueled with slightly enriched uranium and with net electrical capacity of about 17,000 kw. The Associates are to pay capital costs, estimated at about $22,000,000; costs to the USAEC will be $14,655,000. Stone & Webster Engineering Corp., Boston, are architect-engineer on the project, with Westinghouse Electric Corp. developing and furnishing plant equipment.

BIDS ON ITALIAN NUCLEAR POWER PLANT BEING EVALUATED:- Now being evaluated are bids to construct the 150,000 electrical kw nuclear power plant in southern Italy for Societa Elettronucleare Nazionale (SENN). Bids were made by International General Electric; H. K. Ferguson Co.; Atomics International division of North American Aviation; and Kaiser Engineers, in the U.S. British bidders were AEI-John Thompson Nuclear Energy Co., Ltd.; General Electric Co., - Simon Carves Atomic Energy Group; and English Electric Co., Ltd. A joint U.K.-U.S. venture was American Machine & Foundry-Mitchell Engineering, Ltd., which submitted bids. French bidder was Societe Alsthom. Final selection is expected by next Fall. Assisting SENN in selecting contractor is Internuclear Co., of Clayton, Mo., which is providing consulting and engineering services, and a seven man international panel of experts set up by the World Bank which is providing major financing. Heading SENN is Prof. Carlo Matteini.

NEW COMPANY FORMED:- New company, English Electric-Babcock Wilcox-Taylor Woodrow Atomic Power Construction Co., Ltd., has been formed in London by the three principals involved to administer the contract for the nuclear power station at Hinkley Point, Somerset, construction of which began last Fall. The three firms will act under sub-contract from the new company in carrying out the contract. Hinkley Point, to be the largest nuclear power station in the world, will have net electrical output of 500,000 kw.

PLANS ABANDONED FOR NUCLEAR POWER PLANT PROPOSED BY ELECTRIC CO-OPERATIVE:- Plans have been dropped by the USAEC for the proposed homogeneous reactor nuclear power project of Wolverine Electric Cooperative, Big Rapids, Mich. Generating costs of the proposed 10,000 electrical kw proposed plant would be several times greater than its present costs, according to an analysis by Wolverine people. Action of USAEC will not affect a 70,000 to 150,000 kw plant of this type planned by Pennsylvania Power & Light-Westinghouse Electric Corp.

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NEW PRODUCTS, PROCESSES, INSTRUMENTS...for nuclear lab & plant...

NEW PRODUCTS FROM MANUFACTURERS:- Iso-octane-C14 is now being offered by this producer whose radiochemical division has performed the first synthesis of the compound with carbon-14 labeling. The product is said to be free of both chemical and radiochemical impurities, with specific activity of 2.86 mc/mM. Higher specific activities can be provided on order.--Research Specialties Co., 2005 Hopkins St., Berkeley, Calif.

New general purpose transistor test set Model KP-2 is offered by this manufacturer for analyzing transistors at frequencies from 100 cps to 200 Kc. The set is used with an external oscillator and vacuum tube voltmeter.--Baird-Atomic, Inc., 33 University Rd., Cambridge 38, Mass.

Portable battery-operated survey meter, which measures the intensity of and distinguishes between alpha, beta and gamma radiation, is this manufacturer's Model 6 Juno. Model 6 is a new version of the Juno, basic health physics instrument, which was originally developed at Hanford Works and improved by this manufacturer for commercial production. Two models are SRJ-6, standard range, 50, 500 & 5000 MR/HR full scale; and HRJ-6, high range, 250, 2500, and 25000 MR/HR full scale.--Technical Associates, 140 W. Providencia Ave., Burbank, Calif.

PRODUCT NEWS:- Price reductions on rare-earth oxides and salts have now been made by Nuclear Corp. of America. Reductions, which run from 40% to 90%, are result of greatly increased volume of use through new applications in nuclear, electronic, metallurgical and other industries. For high purity oxides of thulium, neodymium, and europium, prices are down some 80% to 85%. For lutetium oxide of 99% purity, price has been reduced to $15 per gram, from $150 per gram, a reduction of 90%.

Radioactive cobalt which the Nuclear Systems division of the Budd Co., Philadelphia, processes and encapsulates is now being exported by that firm to medical institutions abroad. Of three recent shipments, two were made to destinations in France and one to New Zealand.

EXPERIMENTAL WORK:- Work done by research people of Shell Development Co., on performance of fuel for aircraft jet engines has shown that jet fuels made from certain petroleum components retain their stability even under fairly intense gamma radiation. The work, under an Air Force research contract, is aimed at determining performance of fuels which may be used as auxiliary to nuclear aircraft at takeoffs, landings, and during other maneuvers.

Improvements have recently been made by National Bureau of Standards research people in both the speed and efficiency of a widely used scintillation method for neutron detection. The method makes use of a plastic button containing an indicating compound which emits a light pulse when activated by incident particles. By substituting organic plastic scintillators for the inorganic phosphors previously used as indicators, Bureau staff people have obtained a button which has advantages for many problems in neutron detection and which also shows potentialities for use as a neutron dosimeter for all energies of neutrons.

Long term exposure to minute quantities of nuclear radiation has the effect of speeding up the aging process, a study with mice at the University of Chicago indicates. The study, sponsored by the Air Force, also indicates that a large single dose of neutron radiation does less biological damage than the same total radiation administered in a series of smaller doses. This contradicts the theory that the effects are the same if the radiation totals are equal. Heading the study, which is a continuous one, is John Doull, assistant professor of pharmacology at Chicago, and assistant director of its Air Force radiation laboratory.

MANUFACTURERS' NEWS:- Additional sales territory has been awarded four of its representatives by Radiation Counter Laboratories, Inc., Skokie, Ill. The new acquisitions are Wyoming to Gene French Co., of Albuquerque, N.M.; Montana to Ray Johnston Co., of Seattle, Wash.; Minnesota to Robert Lang & Associates, of Chicago, Ill.; and northern Mississippi to The Ellison Co., of Atlanta, Ga.

The multi-channel scintillation spectrometer developed by Nuclear Enterprises, Ltd., of Winnipeg, Canada, is now being promoted and actively sold through its Edinburgh, Scotland, office (Bankhead Medway, Sighthill). Suggested applications which the company makes for this spectrometer include its use for flow studies in catalytic cracking plants, and in other industrial operations.

BIDS ASKED, CONTRACTS AWARDED...

Power & Light-Westinghouse Electric Corp.

ATOMIC ENERGY FINANCIAL NEWS...

MERGER APPROVED:- Merger of American Potash & Chemical Corp. with Lindsay Chemical Co., has now been given stockholder approval. Common stock is being exchanged on a share-for-share basis, while holders of Lindsay's 7% cumulative preferred (125,000 shares outstanding) will exchange them for 3,750 shares of a newly authorized American Potash stock issue. Lindsay, largest producer of thorium salts in the U. S., has for many years delivered thorium under contract to the USAEC. It also conducts a large rare-earth chemicals business; merger of the two firms will give combined firm large line of diversified chemicals.

GOOD QUARTER FOR URANIUM MINING FIRM:- Net profit of $135,610 for the quarter ended April 30, 1958 has been reported by Western Gold & Uranium Inc., from uranium mining operations at its Orphan mine in the Grand Canyon, Arizona. Previous loss carryovers will eliminate income taxes for all of this year, company officials estimate. Production at the Orphan mine for the three months totalled 3,072 tons of uranium ore averaging better than 0.95% uranium oxide, nearly four times the average U.S. grade now being mined. The company hopes to increase its production rate from 1,000 to 5,000 tons per month on completion of a large shaft now being put down; an $800,000 project, it is expected to be completed early in 1959 and without additional company financing.

ATOMIC ENERGY PATENT DIGEST...

ISSUED May 13, 1958 to PRIVATE ORGANIZATIONS AND/OR INDIVIDUALS:- (1) Radioactive resistor. V.E. Ragosine, inventor. No. 2,834,899 assigned to Sprague Electric Co., North Adams, Mass.

ISSUED May 13, 1958 to GOVERNMENTAL ORGANIZATIONS:- (1) Method of producing uranium. L.S. Foster, T.T. Magel, inventors. No. 2,834,672 assigned to USAEC. (2) Electrochemical decontamination and recovery of uranium values. J.A. McLaren, J.H. Goode, inventors. No. 2,834,722 assigned to USAEC.

ISSUED May 20, 1958 to PRIVATE ORGANIZATIONS AND/OR INDIVIDUALS:- (1) Radioactive tracers for pipe lines. B.A. Fries, inventor. No. 2,835,699 assigned to California Research Corp., San Francisco, Calif. (2) Apparatus for locating a zone of lost circulation. G. Herzog, inventor. No. 2,835,819 assigned to The Texas Co., New York, N.Y. (3) Method of observing and classifying the spectrum of gamma rays. R.E. Fearon, inventor. No. 2,835,821 assigned to Well Surveys, Inc., Tulsa, Okla.

ISSUED May 20, 1958 to GOVERNMENTAL ORGANIZATIONS:- (1) Solvent extraction process for recovery of uranium values from aqueous solutions. W.J. McGinnis, inventor. No. 2,835,552 assigned to USAEC. (2) Reduction of acidity of nitric acid solutions by use of formaldehyde. T.V. Healy, inventor. No. 2,835,555 assigned to USAEC. (3) Hot pressing with a temperature gradient. H.H. Hausner, inventor. No. 2,835,573 assigned to USAEC. (4) Process of preparing uranium-impregnated graphite body. M.A. Kanter, inventor. No. 2,835,608 assigned to USAEC. (5) Treatment of metals prior to electro-plating. R.A.U. Huddle, O. Flint, inventors. No. 2,835,630 assigned to USAEC. (6) Isotope fractionation process. G.H. Clewett, De Wayne A. Lee, W.B. Schaap, inventors. No. 2,835,687 assigned to USAEC. (7) Wide range proportional counter tube. J.J. Borzin, inventor. No. 2,835,839 assigned to Secretary of the Navy. (8) Multi-electrode tube pulse memory circuit. J.C. Gundlach, J.B. Reeves, inventors. No. 2,835,848 assigned to USAEC. (9) Directional antenna. B.J. Bittner, inventor. No. 2,835,890 assigned to USAEC.

NEW BOOKS & OTHER PUBLICATIONS...

Safety Techniques for Radioactive Tracers, by J.C. Boursnell. Precautions to be followed by anyone handling radioactive substances. 68 pages.--Cambridge University Press, London, England. (7s 6d.)

Uranium Procurement; Legal Aspects of the USAEC's Domestic Ore Purchase Program. Reprint of article by this title in Michigan Law Review by M. Scott, and E.M. Heppenstall, of the U. of Michigan Law School. An analysis of the program with which many domestic uranium producers are dissatisfied.--Uranium Institute of America, Grand Junction, Colo.

Evaluation of the Calder Hall Type of Nuclear Power Plant. Report No. NAA-Sr-1833. 111 pages. A Further Evaluation, etc. Report No. NAA-SR-1955. 52 pages. Reports discussing design of plant similar to Britain's Calder Hall facility; compiled under USAEC contract by W.F. Banks and others of North American Aviation -- Office of Technical Services, Wash., 25, D.C.

BIDS ASKED, CONTRACTS AWARDED...

BIDS ASKED:- Bids have been asked by USAEC's Hanford operations office, Richland, Washington, for construction of buildings for plutonium recycle test reactor and plutonium fabrication pilot plant at Hanford Works. Deadline for bids is June 24.

CONTRACTS AWARDED:- On a bid of $466,380 (lowest of three submitted) Arrington Construction Co., Idaho Falls, Idaho, has been awarded contract by the USAEC to construct the process improvement facility at the national reactor testing station, Idaho Falls. Work will include provision for contaminated waste system, etc.

Contract of H. K. Ferguson Co., Cleveland, for miscellaneous plant construction services at Oak Ridge, has been extended by the USAEC's Oak Ridge operations office. Initial contract with Ferguson would expire Aug. 15, 1958; the new extension is to June 30, 1960. Work done under the contract (which is of the fixed-fee type) consists of modifications and alterations to existing facilities at the USAEC's production plants and laboratories at Oak Ridge.

Contract in amount of $985,000 for installation of fire protection sprinkler systems in part of the gaseous diffusion plant at Oak Ridge has been awarded Hickman Bros., Los Angeles, Calif., by the USAEC's Oak Ridge operations office. (Increased fire protection, with other contracts to follow, is on recommendation made by Factory Insurance Association, and Factory Mutual Engineering Div.)

RAW MATERIALS...prospecting, mining, marketing...

UNITED STATES:- No great increase in uranium sales will result from recent USAEC policy change which permits private uranium sales abroad to countries not covered by bi-lateral agreements, industry spokesmen now point out. Since sales to countries that have bi-lateral agreements with the U. S. have been going on for over a year, and the new policy allows a maximum of about $16,000 in uranium to be sold annually to others, the volume of new business possible may be about $250,000 a year for the entire uranium mining industry. This is about a tenth of one percent of the present volume of business being done by uranium mining companies. Total sales of the industry will thus be little affected, and the industry hopes for more liberalization of the USAEC's sales policies.

CANADA:- New uranium and gold staking rush of some proportions is now underway in the Kipawa area of Quebec, some 60-miles northeast of North Bay, Ontario, near the Ontario border. Extent of activity may be judged by the 200 or so mining licenses issued for the area in last fortnight alone, and the several thousand claims staked since last Fall when news came out of high grade uranium finds there. More recently, gold has been found associated with the uranium values there.

MEETINGS, COURSES, CONFERENCES...on nuclear energy subjects...

International Congress on Nuclear Physics is scheduled for July 7-12 in Paris, France, under sponsorship of International Union of Physics, and UNESCO. Details are available from Congress International de Physique Nucleaire, Institut du Radium, 11 rue Pierre Curie, Paris 5, France.

Fifth International Electronic and Nuclear Exposition and Congress is planned for June 16-30, Rome, Italy. Further information may be obtained from J. V. Vinciguerra, Office of Special Projects, USAEC, Wash. 25, D. C.

Society of Nuclear Medicine, fifth annual meeting, is being held June 19-21, Los Angeles, Calif. Program, other details, from G. C. Kyker, ORINS Medical Div., Box 117, Oak Ridge, Tenn.

American Nuclear Society, fourth annual meeting, is being held June 2-5, Los Angeles, Calif. Information may be obtained from Robert L. Loftness, Atomics International, Box 309, Canoga Park, Calif.

PEOPLE...in nuclear energy work...

W. W. Grigorieff has joined the staff of the International Atomic Energy Agency, which has headquarters in Vienna, Austria. Dr. Grigorieff has taken leave of absence from Oak Ridge Institute of Nuclear Studies, Oak Ridge, to accept the new position.

Sincerely,

The Staff,
ATOMIC ENERGY NEWSLETTER